

iNetVu™ 5000 Controller User Manual

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FCC and INDUSTRY CANADA INFORMATION TO THE USER:

The FCC and Industry Canada have imposed the following conditions when operating, installing and deploying iNetVu™ Mobile Earth Stations and is mandatory for all installations made within the Continental United States and Canada as well as Hawaii, Alaska, Puerto Rico, the U.S. Virgin Islands and other U.S. Territories. The FCC requires that a certified installer perform the installation. It is also strongly recommended that a qualified professional RV dealer/installer mount the system on your vehicle. These conditions are also required by C-COM for all other installed locations.

All iNetVu™ Mobile earth station installers must be C-COM Certified, and must have specifically acknowledged the requirements for iNetVu™ Mobile installations, which are as follows:

- "Installation" is the physical mounting and wiring of the Satellite provider's earth station on a vehicle or other stationary site in order to prepare for correct operation. Only Certified C-COM iNetVu installers may perform the installation and removal of an iNetVu™ Mobile system.
- 2. "Deployment" means the raising, pointing and orienting of the earth station to the communicating satellite, every time it is raised from a stowed position for use. The deployment of an iNetVu™ Mobile system must only be done by a trained installer or by a consumer using the deployment software.
- 3. Installers shall install the iNetVu™ systems only in locations that are not readily accessible to children and in a manner that prevents human exposure to potential radiation hazards.
- 4. For large vehicles with roof mounts, the height of the bottom lip of the earth station when fully deployed must be at least six feet above the ground at all times, or six feet above a surrounding surface which a person may easily access.
- 5. If a roof access ladder or any other means of access to the roof is installed on the vehicle, then the ladder or access must be blocked by a suitable rope or other barrier while the earth station is deployed or in operation. The installer must provide this rope or barrier directly to the end user at the time of installation and advise the user to use it at all times when the earth station is deployed or in operation. Warning signs shall also be provided by the installer to the end user to be posted on the rope or other barrier warning all persons not to attempt to access the roof of the vehicle while the earth station is deployed or in operation.
- 6. Warning signs shall be posted at prominent locations on the earth station informing all persons of the danger of harmful radiation from the earth station while it is deployed or while in operation.
- 7. The iNetVu™ Mobile system may only be operated when the vehicle is stationary.
- 8. The installer must inform the end user that the vehicle must be stabilized during the transmission, to prevent movement of the vehicle for any reason, including movement of persons on or off the vehicle, or high winds. The installer shall advise the end user how to appropriately stabilize their vehicle.
- 9. Installers shall be liable for all damages if they fail to comply with the above mandatory conditions. This includes, but is not limited to damages caused by improper installation or due to the failure to provide required information to the end user.
- 10. Installers and end users will be deemed directly liable for any damages resulting from either of their failure to comply with the above rules. These rules are meant to ensure that extraordinary precautions and measures are used to prevent

- satellite interference or exposure to harmful radiation. C-COM reserves the rights to immediately **suspend without liability or previous notice** the operation of the earth station upon detection of a deviation from its installation or operational requirements until the deviation is corrected. In addition, C-COM reserves the right to suspend or cancel the Installer Certificate of any installer that has not fully complied with these installation requirements.
- 11. Further, the installer and end user may be directly liable for any damages resulting from any change undertaken by either of them. Including but not limited to, any modification of any part of the hardware, software, specific operational frequencies, the authorized satellite, or the size or other characteristics of the earth station supplied to them by C-COM or C-COM's authorized representatives.

Note 1:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Note 2:

This Class B digital apparatus complies with Canadian ICES-003.

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Revision Notes

The table below records the current version status of this document and any changes from the previous versions.

Rev.	Date	Edited By	Description
1.0.1	04/11/2008	A. Cheikhali	Document Creation
1.0.2	05/20/2008	A. Cheikhali	IDirect BroadCast Addition

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1. Introduction



Fig. 1: INetVu[™] 5000 Controller

Designed to interface with a growing number of Satellite Modems, VSATs, and DVB-RCS Receivers, the iNetVu™ 5000 Controller is an easily configurable and operated unit.

It features Automatic Operations such as Find Satellite and Stow Antenna, as well as the ability to manually move the Antenna for cross-pol testing, demonstrations, or installations.

The iNetVu[™] DVB-S Tuner Kit is an optional kit addition to the iNetVu[™] 5000 Controller. Easily installed, the iNetVu[™] DVB-S Tuner will speed up satellite acquisitions to less than 2 minutes. Once an integrated part of the iNetVu 5000 Controller, the iNetVu[™] DVB-S Tuner works on all iNetVu antennas.

This high performance addition to the iNetVu™ 5000 Controller is programmable to any DVB-S Satellite and also features a list of pre-configured satellites for the user to select from.

The iNetVu™ DVB-S Tuner Kit can be used as a stand-alone receiver or as an integral component of existing service / modem integrations.

2. Specifications

iNetVu™ 5000C Controller

Dimensions 10.5" x 6" x 1.5" (27cm x 16cm x 4 cm)

Weight 2 lbs (1kg)

Operation Temperature 32°F to 122°F (0°C to 50°C)

Elevation Output 12VDC, 12 A (Max.) **Azimuth Output** 12VDC, 8 A (Max.) **Polarization Output** 12VDC, 2 A (Max.)

Fuse Type Blade-type Automotive, Fast-acting (15 A, 10 A, 5 A)

Power Input 12VDC @ 12.5 A (Min.) Idle Power Consumption 12VDC @ 500 mA

Power Connector4 Position 5.08mm Terminal BlockMotor Control Connector8 Position 5.08mm Terminal Block

Signal Input Female DB26 Connector **GPS Connector** SMA (<u>Sub-Miniature Version A</u>)

Rx Connector Type F RG6

PC Interface USB or DB9 Serial Connector

Tuner Specifications

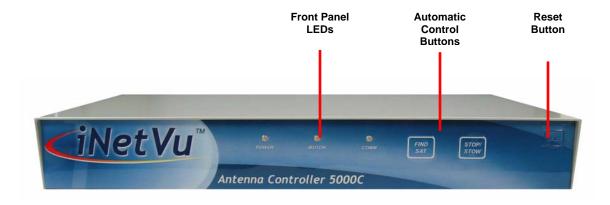
RF Input Range: 950MHz to 2150MHz Input Dynamic Range: -75dBm to -25dBm

Input/Output Impedance: 75 Ω

Symbol Rate: 1 to 45Msps

Item		Specification				Condition
		Min	Тур	Max	Unit	Condition
Fre	equency	950		2150	MHz	
Retu	urn Loss	6	10		dB	950MHz to 2150MHz
Nois	se Figure		6	10	dB	Maximum Gain
Loop Th	nrough Gain	-2.0		4.0	dB	
Input Dy	namic Range	-75		-25	dBm	
ı	MD3	40			dBc	Desired & undesired input Level are -25dBm
Local	Leakage		-80	-70	dB	950MHz to 2150MHz
Phase Noise	10KHz		-84		dBc/Hz	
	100KHz		-105		dBc/Hz	

3. Physical



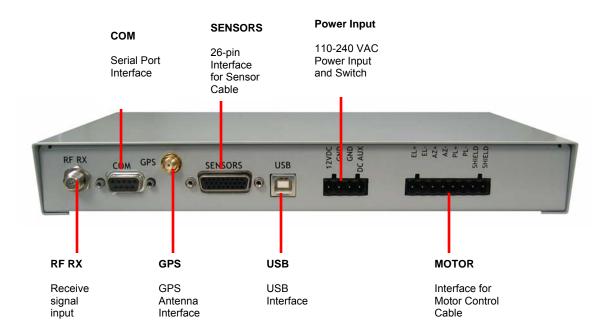


Fig. 2: iNetVu™ 5000 Front and Rear Panel

4. System Power

All iNetVu™ Systems include a DuraComm® LP-18 Power Supply Unit (PSU) which has been calibrated to give an output of 12.5 VDC for the iNetVu™ 5000 Controller.



An alternate 12VDC power supply **MUST NOT** be used as this may cause problems with the operation of the mount and/or irreversibly damage the system. The supplied 12VDC Power Cable **MUST** be used to connect the iNetVu[™] Controller to the PSU. Failure to adhere to these warnings may void the warranty of the iNetVu[™] System.

For 220VAC users only: The DuraComm® LP-18 Power Supply has been converted prior to shipment to meet the requirements of 220VAC. If a replacement DuraComm® LP-18 is required, please see Appendix 1 for the manual conversion procedure.

The satellite modem, PC control platform, DuraComm® LP-18 Power Supply (if used), fans, lights, etc. will require AC power. All of these components must be factored in when surveying mobile power requirements.

Sample Power Requirement Summary:

AC Power Draw	DC Power Draw
Satellite Modem 120W	iNetVu™ 5000 Controller 200W 12V
(Approx. – Check with modem requirements)	
Laptop computer 100W	
(Approx. – Check with computer requirements)	
DuraComm® LP-18 Power Supply 150W	
(Approx if utilized)	
Total 370W AC	Total 200W DC

5. Typical Connection Configuration

The typical connection configuration for each service will be the same regardless of the Satellite Modem / VSAT. However, the configuration parameters for Satellite Modem / VSAT Communication will differ depending on service. Please consult the iNetVu™ System Manual for the service which you are using to determine how to set this up.



Be sure that you do not have any PCs or devices connected to the USB Port on the iNetVu™ 5000 Controller, as this will interrupt the normal boot-up sequence.

Without Tuner Installed

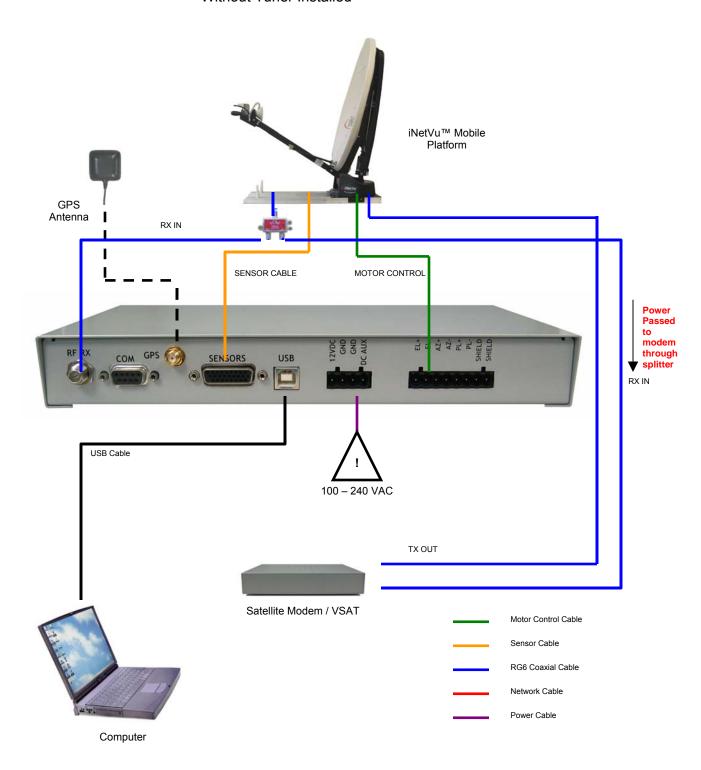


Fig. 3: iNetVu[™] 5000 Controller Typical Connection Configuration (No DVB Tuner Installed)

iNetVu™ Mobile Platform GPS Antenna RX IN SENSOR CABLE MOTOR CONTROL **Power Passed** to modem through splitter RX IN USB Cable 100 - 240 VAC TX OUT Satellite Modem / VSAT Motor Control Cable Sensor Cable RG6 Coaxial Cable Computer Network Cable Power Cable

Tuner Installed

Fig. 4: iNetVu[™] 5000 Controller Typical Connection Configuration (DVB Tuner Installed)

6. Installation

The iNetVu™ 5000 Controller is shipped pre-configured for the iNetVu™ Mobile Platform and service which you plan to use, and only configuration of Satellite Modem / VSAT Communication parameters and the satellite you wish to find are required.

6.1. Setup

- 1. Connect all of the cables and components as depicted by the previous section.
- 2. Power on the PC and the iNetVu™ 5000 Controller.
- 3. Run the iNetVu[™] 5000 Software
- 4. Advance to the Controls Screen and ensure that all the status panel indicators are green.
- To configure the Satellite Modem / VSAT Communication Parameters, go to the Configuration Screen and configure as required for the type of service you are using, and click save. This will be specific to the service that you are using.
- 6. To configure the Target Satellite, go to the Maintenance Screen, and enter the Satellite Name, Longitude, and Tx Polarity (Sat Pol Offset: 0 Vertical, 90 Horizontal), and click save.
- 7. Go to Controls Section, and ensure that ALL System Status Panel Indicators are green.
- 8. That's it. You have successfully completed the installation and setup of the iNetVu™ 5000 Controller and are ready to find satellite.

7. LED Definition

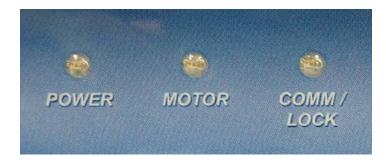


Fig. 5: iNetVu™ 5000 Controller Front Panel LED Panel

POWER

Solid light indicates power is ON.

MOTOR

Flashes when any of the three motors are instructed to move.

COMM / LOCK

Indicates Communication between Controller's internal Board and internal PC.

Slow blinking (1 sec. intervals) indicates idle communication.

Fast blinking (1/4 sec. intervals) indicates that command is being executed

Solid Light indicates lock on Satellite.

8. Automatic Controls Button Operation



Fig. 6: iNetVu™ 5000 Controller Front Panel Buttons

How to Find Satellite

Press "FIND SAT" Button.

iNetVu™ Mobile Platform will automatically attempt to locate, lock, peak and enable the system onto the configured satellite.

How to Stow the Antenna

Press "STOP/STOW" Button and Hold for (two) 2 seconds. iNetVu™ Mobile Platform will automatically re-center itself and lower into the stow position.

How to Stop

Press "STOP/STOW" Button.

Stops all ongoing operations such as motor movements and automatic functions like Find Satellite and Stow.

How to Reset the Controller

Press "RESET" Button
Power-cycles the iNetVu™ Controller
DOES NOT reset default values

9. DVB Receiver Operation

The iNetVu[™] DVB Receiver must be used in conjunction with IMS 6.1.1 and Firmware 6.1 at a minimum - any previous version of IMS or controller firmware ARE NOT compatible with the iNetVu[™] DVB Receiver.

The iNetVu™ DVB Receiver can be used as for either:

- A stand-alone DVB Receiver
 - Used to locate and lock onto either a manually-configured or preset satellite
 - Manual Configuration requires:
 - Orbital Slot of Satellite
 - Receive Polarization
 - L-Band Rx Frequency (kHz)
 - Symbol Rate (kSps)
 - FEC Code Rate
- Integrated component of a modem / VSAT that the iNetVu[™] Mobile System is compatible with.
 - Uses the DVB Receiver to locate and lock onto a preset satellite
 - Uses existing integration and communication with modem / VSAT to automatically enable/disable the transmitter, initiate ACP testing (if applicable), and all other modem / VSAT specific actions.

Note: Switching between services no longer requires the need for a Switch ID. A unique code previously used with older versions of IMS (5.2.1 and below).

A pre-indexed file (satparam.txt) contains a listing of transponders for many of the well-used and known satellites being operated with.

The target satellite entered by the user will always initially searched through this database, and should the satellite longitude match that of an entry in the database, IMS will use the preset transponders associated to the user-entered receive polarity.

If the satellite longitude entered does not appear in the database, ERR3091 will appear in the message panel notifying the user. At this time, the user is asked to manually enter the transponder parameters in the Advanced Maintenance section of IMS.

9.1. Stand-alone Receiver

IMS service must be set to 'iReceiver'.

9.2. Existing Modem Integration

IMS service must be set to that of the existing service/modem.

(For example, if you are using an iDirect modem, the IMS service must be set to 'iDirect')

9.3. Setting Target Satellite

Using the Maintenance screen (either in Windows Interface or Web Interface), the user can set the Satellite Name, Longitude and the Receive/Transmit Polarity.

Note: Sat Pol Offset; Vertical Rx = 90; Horizontal Rx = 0 (For CONFIG Mode and Web Interface only)



Fig. 7: Satellite Parameters for USER and CONFIG Mode



Fig. 8: Satellite Parameters for Web Interface

9.4. Disabling DVB Receiver

Should the user decide not to use the DVB Receiver for satellite acquisition, and prefers to use the standard integration method using the RF Detector, please follow the steps below.

1. Advance to the "iNetVu Configuration" screen, and select the "Start in Config Mode" check box, as outlined in the figure below.

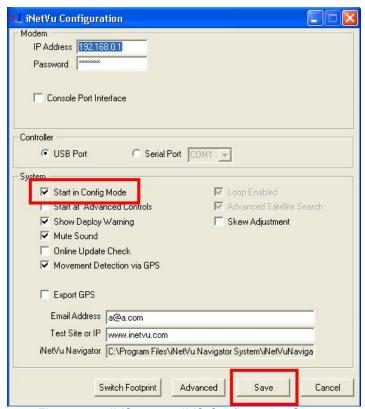
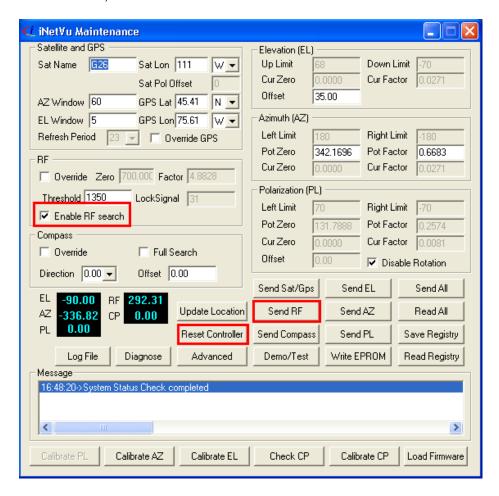


Fig. 9: IMS 6.2.1 – IMS Configuration Screen

2. Click the "Save" button. If you are prompted to write to EPROM, click "Yes" and restart IMS.

3. Advance to the iNetVu Maintenance Screen, click in the "Enable RF Search" Check box, and then click the "Send RF" Button.



- 4. When you are prompted to write to the EPROM, click "**OK**" to confirm the operation. This is a crucial step in successfully applying the switch.
- 5. Reset the controller using the "reset" button on the front panel, or through the "Reset Controller" button in the maintenance menu. Wait until the controller is fully reset and all parameters are successfully read before proceeding to the next step.
- 6. Power off the iNetVu[™] 5000 Controller, and switch the Rx controller cable from the DVB Tuner "Rx IN" input to the "Rx Aux" input.
- 7. Power on your 5000 Controller, and you will be set to function in RF mode.

Note: To switch back to DVB mode, uncheck the "Enable RF search" check box, click the "Send RF" button, save to EPROM when prompted, and reset the iNetVuTM 5000 Controller. Ensure that your controller is powered off before switching the Rx Cable from the RF input back to the DVB input.

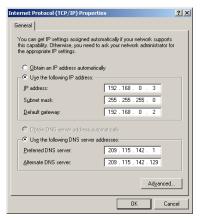
9.5. How to Set Network Configurations on your PC



 Open Network Connections, right-click your network card, and select Properties.



2. Select Internet Protocol (TCP/IP) and click Properties.



3. <u>Direct Network Connection:</u>

Set your PC to the same subnet as the VSAT Modem, and the Default Gateway to the VSAT Modem IP.

The screenshot depicts this configuration.



10. Operation

10.1. Operating Environment



iNetVu[™] offers an always-on connection. We recommend that you stow the antenna when you are finished using the Internet. If you are taking a break, we recommend that you keep the iNetVu[™] 5000 Controller and software running for

safety reasons, as the antenna will stow automatically when it senses movement either by high wind or if you inadvertently drive away without first stowing the dish. Note that the antenna takes a certain amount of time to stow and if you encounter a low hanging obstruction immediately after driving away, the antenna can be seriously damaged.

The iNetVu™ Antenna emits radio frequency energy. Do not attempt to access the roof while the dish is deployed or operational.

Before raising the antenna make sure you are not near any large metal objects as this may affect the magnetic compass reading and cause the dish to point in the wrong direction.

It is recommended to cover the iNetVuTM Mobile System with an appropriate fabric (water proof type) while it is not in regular use (e.g. storage). This will prevent any obstructions (e.g. snow, ice, sand) from accumulating around sensitive areas such as the linear actuator and limit switches. If the iNetVuTM Mobile System remains in use under extreme weather conditions for an extended period of time, a visual inspection and cleaning are necessary prior to deploying and stowing the antenna.

The iNetVu™ Mobile System should **not** be used under strong wind conditions of 40 mph (60 km/h) or greater.

Power and/or automatic car wash is **not** recommended as this may inadvertently dislodge or damage key components.

10.2. Transport Conditions

All iNetVu™ Mobile Systems are designed to be transported on vehicles or platforms on normal public roadways in average to good conditions. Should the iNetVu™ Mobile System be exposed to rough transportation conditions, the following precautionary actions are recommended.

- Securely support the feed arm assembly and antenna dish with tie down during transport
- Use of transport cases to reduce exposure and damage during shipment to and from sites to be deployed

10.3. Starting iNetVu™ Mobile

iNetVu[™] Mobile Software is typically installed into your 'Startup' folder, and will remain active, but minimized in your System Tray. Should you not see the iNetVu[™] 'Swirl' icon in your System Tray, see below for starting up the iNetVu[™] Mobile Software manually.

1. Click Start → Programs → iNetVu → iNetVu Mobile

OR

2. Click the iNetVu™ Mobile shortcut icon on the desktop.

10.4. iNetVu™ 5000C Controller Basic Operations

With the installation of iNetVu[™] Mobile Software (IMS) Version 4.8.1+, IMS will always automatically start up when you turn on your PC. A small red icon will appear in the System Tray notifying you that IMS is running, and is ready for operation.

The ability to perform the basic operations of Finding Satellite, Stowing the Antenna, and Stopping Operations, is now accessible without opening up any of the IMS menus.



10.4.1. How to Find Satellite

- Press "FIND SAT" and hold for 1 second.
- iNetVu[™] Mobile Platform will automatically attempt to locate and lock onto the satellite.
- The iNetVu[™] Mobile Software will 'beep' during the satellite peaking process to indicate the strength of the received signal.
- When the iNetVu™ Swirl icon in your System Tray turns green, you are now connected and ready to surf.

10.4.2. How to Stow the Antenna

- Press "STOP / STOW" and hold for 2 seconds.
- iNetVu[™] Mobile Platform will automatically re-center itself and lower into the stow position.

10.4.3. How to Stop

- Press "STOP / STOW" Button
- Stops all ongoing operations such as motor movements and automatic functions like Find Satellite and Stow.

10.4.4. How to Reset

Press "RESET" to power-cycle the Controller.

10.5. Software Basic Operations

10.5.1. Finding Satellite

- 1. Right-click on the iNetVu™ "swirl" icon and select **Basic Controls** or **Advanced Controls**.
- 2. Click Find Satellite.

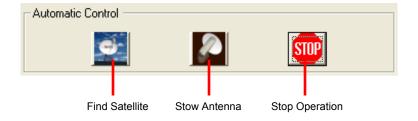


Fig. 10: Automatic Control Buttons

3. The dish automatically raises and locks on satellite within 3 to 5 minutes assuming there are no obstructions in its view of the satellite. Once the dish has locked on to the satellite, the iNetVu™ "swirl" icon in the system tray will turn GREEN.

That's all there is to it! Once you are locked on satellite and the dish icon turns green, you can access the Internet!

Note: In the event the iNetVu[™] icon is green and you cannot access the Internet, please contact your service provider and ensure your account information is correct.

10.5.2. Stowing the Antenna

- Right-click on the iNetVu™ "swirl" icon and select Basic Controls or Advanced Controls.
- 2. Click Stow Antenna.



Fig. 11: Automatic Control Buttons

10.6. Shortcut Keys

Shortcut Keys are available for the following functions while the user is accessing the **Basic Controls** and **Advanced Controls** menu.

Ctrl+UP Find Satellite
Ctrl+DOWN Stow Antenna
Ctrl+S Stop Operation

Ctrl+END Exit

10.7. Transmitter Enabled Movement

After locking onto a satellite, a new button labeled "TE" will appear in the **Advanced Controls** menu. By default, the transmitter will be automatically disabled whenever the dish is in motion.



Under no circumstances should the vehicle be moved with the iNetVu™ System in the elevated position.

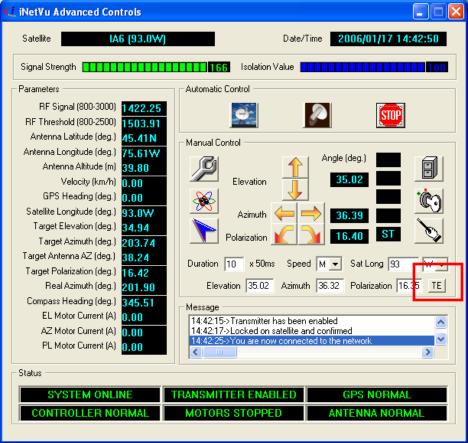


Fig. 12: TE Button allows user to move the dish while transmitter is enabled

TE Button allows user to move the dish while transmitter is enabled

By clicking the "TE" button, the user will be able make manual position adjustments with the transmitter still enabled, and be able to perform cross-pol tests, Carrier Wave tests, etc.

While in TE is enabled, the user can make incremental movements at a predetermined speed and duration. The Duration and Speed fields do not require to be modified.



11. iNetVu™ Mobile Software

11.1. Introduction

The iNetVu™ Mobile Software plays an integral role in connecting you and iNetVu™ Mobile System. It has the ability to communicate with the Satellite Modem, automatically find and lock onto a satellite and stow the antenna when completed. The user can also monitor real-time system parameters such as Signal Strength, GPS Coordinates, motor currents, as well as allowing the user the capability of manually moving the antenna and performing any maintenance tests and calibration tasks.

11.2. Initial System Configuration

The first time you start IMS, the Initial System Configuration window will appear, and the user is able to select/modify the following:

- iNetVu[™] Mobile Platform Type
- Communication Method between IMS and iNetVu™ Controller
- Satellite Name, Longitude, and Transmit Polarization
- Modem Communication Parameters
- Contact Email Address

Each Service Type will offer different Modem Communication Parameters, and must be configured for each specific Modem/VSAT.

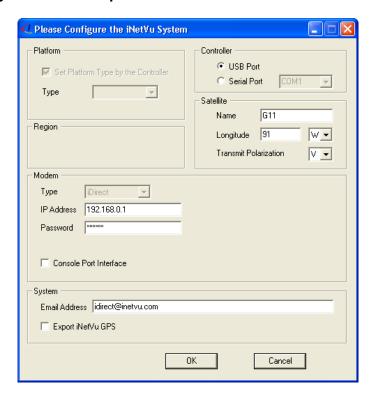


Fig. 13: Initial System Configuration Window

11.3. Operation Modes

iNetVu™ Mobile Software offers two main modes of operation for its users: **USER** and **CONFIG**.

USER MODE

Offers standard access and abilities to configure the iNetVu™ Mobile System. Everyday users should remain in this mode unless advanced options are required. This is the default mode after installation.

CONFIG MODE

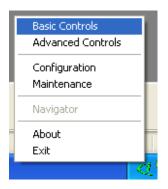
Offers advanced users and installers the ability to modify and set system parameters otherwise unavailable in **USER** mode. More powerful options and functionalities are available in this mode.

11.4. Navigating Menus

To navigate the iNetVu[™] Mobile Software, **right-click** the iNetVu[™] swirl icon located in the System Tray.

There are 7 options available:

- Basic Controls
- Advanced Controls
- Configuration
- Maintenance
- Navigator (Optional software required)
- About
- Exit



11.5. Switching Operation Modes

- 1. Go to **Configuration**.
- 2. Enable **Start in Config Mode** and click **Save**. With this option enabled, iNetVu[™] Mobile Software will always startup in **CONFIG** mode.



3. Restart iNetVu™ Mobile 5000.

11.6. iNetVu[™] Menus (USER Mode)

11.6.1. Basic Controls

The Basic Controls menu allows typical users to operate the three primary functions, as well as monitor system messages and status updates. From the Basic Controls menu, you can operate the following functions:

- Find Satellite
- Stow Antenna
- Stop Operation

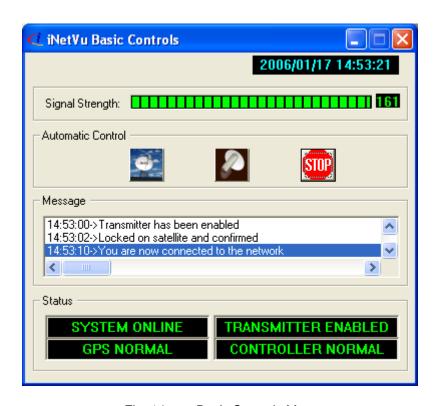


Fig. 14: Basic Controls Menu

Signal Strength



Fig. 15: Signal Strength Display

A real-time Signal Quality Factor (SQF). A value obtained from the Satellite Modem when locked onto a signal. Using a red/yellow/green color-coated system, it denotes the strength of the received signal from the current satellite.

Should the Signal Strength is lower than 29 when locked on satellite, click **Find Satellite** again to re-acquire the signal.

Automatic Control



Fig. 16: Automatic Control Buttons



Find Satellite

Automatically finds and locks onto the satellite signal by communicating with the Satellite Modem and using the GPS coordinates, the compass heading, and internal parameters of the Satellite Modem. Typically, it takes approximately 3-5 minutes to find satellite.

If the Antenna is already pointed on the satellite, clicking **Find Satellite** will repeak the Antenna onto the signal.



Stow Antenna

Re-centers the antenna and lowers it into the stowed position.



Stop Operation

Halts all motor movements and disrupts all communication between iNetVu™ Mobile System components.

Message Panel

Displays real-time operational and status updates of the system's activity.



Fig. 17: Message Panel

Status Panel

Displays real-time status of the System, the Communication with the Satellite Modem, the GPS, and the iNetVu™ Controller.

For a detailed description of all Status Panel messages, please refer to the Advanced Controls section of this document.



Fig. 18: Basic Controls Status Panel

11.6.2. Advanced Controls

The Advanced Controls menu allows users to monitor system parameters and manually move the antenna, as well as conduct automatic processes and functions.



Improper use of Advanced Controls menu can render the iNetVu™ Mobile System inoperable and may be in violation of FCC regulations. The user can halt any operation at any time by clicking STOP button located in the Automatic Controls.

It is recommended that only trained installers or users under the direct consultation of C-Com Satellite Systems Technical Support staff use this menu.

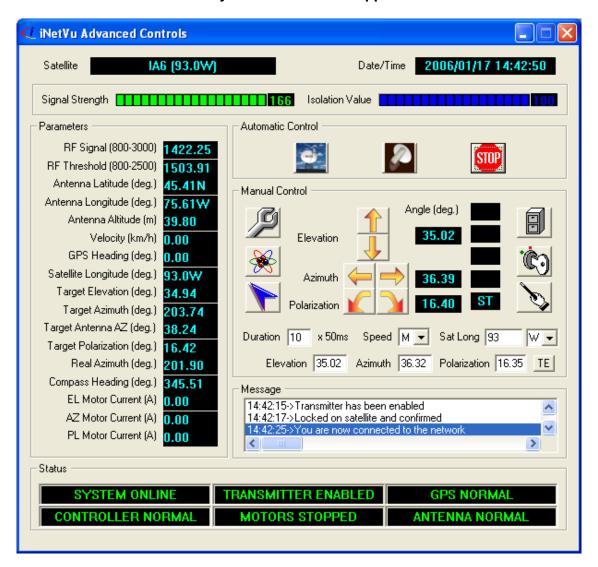


Fig. 19: Advanced Controls Menu

Signal Strength

Denotes the signal quality of the received signal. Refer to the previous section for more a detailed description.



Fig. 20: Signal Strength Display

Isolation Value

Denotes isolation to the current satellite transponder. This value is not an indication of signal strength when transmitting a signal.

The Isolation Value will be 100 upon receiving a Rx Lock Status.



Fig. 21: Isolation Value Display

Date/Time

Current date and time from as received from the GPS Antenna. Should the GPS be experiencing any problems, the alternate source is your PC internal date and time.



Fig. 22: Date/Time Display

Automatic Control

Identical to the Basic Controls menu functions. Refer to the previous section for more detail.

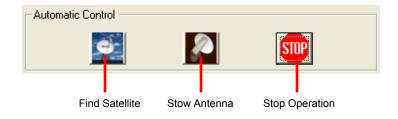


Fig. 23: Automatic Control Buttons

Angle and Limit Switch Indicators

Displays real-time angles and Limit Switch status

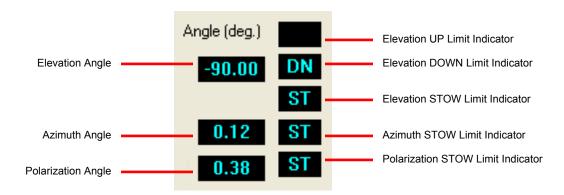
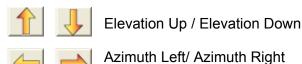


Fig. 24: Angle and Limit Switch Indicators

- When the Elevation STOW Limit Indicator is ON, the Elevation Angle will change to "-90", to denote that the iNetVu™ Mobile Platform is now stowed. It will remain "-90" until the indicator turns OFF.
- For iNetVu[™] 1200 Mobile Platforms, the Polarization Stow Indicator will ALWAYS be ON.
- A YELLOW-colored "F" will appear if a Limit Switch has been disabled in the Advanced Maintenance Menu
- If the Polarization is disabled (for circular signal frequency bands such as Ka-Band or X-Band), the Polarization Angle will display 0.00 and the Polarization Stow Switch must be closed.

Manual Movement





Polarization Counter-Clockwise / Polarization Clockwise

Using the Duration and Speed parameters, the Manual Movement Buttons allow you to move the antenna in six (6) directions. For the correct point of reference for the directional movements, you must be facing the Mobile Platform's Reflector.



Fig. 25: Orientation Reference for Azimuth and Polarization

Duration

Length of time of Manual Movement using increments of 50ms

Speed

Motor Speed of Manual Movement

USER Mode: H = High, M = Medium, L = Low **CONFIG** Mode: 1 = Slowest, 9 = Highest

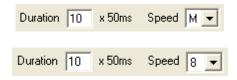


Fig. 26: Duration and Speed Input for USER Mode (Top) and CONFIG Mode (Bottom)



Target Calibrate

Updates the Elevation, Polarization, and Compass offsets in the registry and iNetVu™ Controller's EPROM.

This function is automatically performed after initially finding satellite. It <u>should</u> not be performed again unless the satellite has been found and locked onto.

Target Calibration is typically not required as this procedure is done prior to the system being shipped. Only under the instruction of a certified C-Com technician should calibration be performed again.



Enable Transmitter

Enables/Disables the Transmitter when locked onto satellite.



Deploy Antenna

Automatically moves antenna to the manually entered Elevation, Azimuth and Polarization angles.



Fig. 27: Deploy Antenna Input Values



Record Data

Enables and disables an "always-on" data recording process.

With iNetVu[™] Mobile Software versions 4.0 and higher, parameters are continuously recorded while the platform is searching for the satellite. It automatically stops once the satellite is locked and confirmed. Messages are always recorded in the Message Panel.

Data Log filename: iNetVuData5000.txt.



Network Test

To confirm network connectivity, iNetVu™ Mobile Software will attempt to connect to the iNetVu™ Server via the Internet.



Point Satellite

Automatically points antenna to the manually entered Satellite Longitude, but does not attempt to lock onto the signal, and/or enable the transmitter automatically



Fig. 28: Point Satellite Input Values

This function is recommended for Satellite TV subscribers for finding their desired Satellite.

RF Signal (800 - 3000)

Signal received from the Low Noise Block (LNB).

RF Threshold (800 - 2500)

Minimum requirement RF signal for iNetVu™ Mobile Software to determine if a received satellite signal lock has been established.

Antenna Latitude/Longitude

GPS Coordinates acquired from the GPS Antenna or manually overridden values.

Antenna Altitude

Altitude of antenna above sea level based on the GPS Antenna.

Velocity

The current velocity of the antenna is determined based on any changes in the GPS Coordinates.

Should the GPS Coordinates change, the iNetVu™ Mobile Software will calculate the velocity.

Parameters: RF Signal (800-3000) 1422.25 RF Threshold (800-2500) 1503.91 Antenna Latitude (deg.) 45,41 N Antenna Longitude (deg.) 75.61W Antenna Altitude (m) 39.80 Velocity (km/h) 0.00 GPS Heading (deg.) [].00 Satellite Longitude (deg.) 93.0W Target Elevation (deg.) 34.94 Target Azimuth (deg.) 203.74 Target Antenna AZ (deg.) 38.24 Target Polarization (deg.) 16.42 Real Azimuth (deg.) 201.90 Compass Heading (deg.) 345.51 EL Motor Current (A) 0.00 AZ Motor Current (A) 0.00 PL Motor Current (A) 0.00

GPS Heading

When in the Mobile Platform is moving laterally, the GPS Coordinates change in real-time. Based on the changing GPS Coordinates, the directional heading is calculated.

Satellite Longitude

Longitude of the Satellite which the iNetVu™ Mobile Software has been configured to.

Refer to the Maintenance menu to modify the Satellite Longitude.

Compass Heading

Orientation of the Mobile Platform.

This value is only read during the Find Satellite, Check Compass, and Calibrate Compass processes.



Compass Reference Point

Fig. 29: Compass Orientation and Approximate Values

Target Elevation

Calculated Elevation Angle that the Antenna must point in order to locate the desired Satellite.

Target Real Azimuth

Calculated Azimuth Angle that the Antenna must point in order to locate the desired Satellite in reference to True North.

Target Antenna Azimuth

Calculated Azimuth Angle that the Antenna must point in order to locate the desired Satellite in reference to the Mobile Platform's center position.

Target Polarization

Calculated Polarization Angle that the Antenna must be in order to find the desired Satellite.

Real Azimuth

Azimuth Angle in reference to True North.

EL Motor Current

Current drawn for Elevation Motor (in Amperes)

AZ Motor Current

Current drawn for Azimuth Motor (in Amperes)

PL Motor Current

Current drawn for Polarization Motor (in Amperes)

Message Panel

Displays real-time status updates, system messages, and error codes.



Fig. 30: Message Panel

Status Panel

The Status Panel describes system operations that are either imminent, taking place, or the current status of that component. The Status Panel is located at the bottom of the Basic Controls and Advanced Controls menus, and has a set of four and six message blocks, respectively.

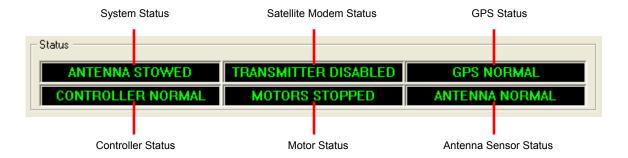


Fig. 31: Advanced Controls - Status Panel

The indicators notify the user of any actions taking place with a combination of color-coated messages.

- Solid "GREEN" messages indicates a stable and normal condition for that component.
- Flashing or solid "LIGHT BLUE" messages indicates a change in status occurring that the user should be aware of.
- Flashing "RED" and "YELLOW" messages indicates a problem with that component.

Should the entire Status Panel flash "RED" and "YELLOW", a communication failure between the PC and the iNetVu™ Controller has occurred. Ensure that the Controller is powered, and that all USB drivers and cables (USB or Serial) are installed properly.

System Status

Displays current system environment

• System Running

Software is currently booting.

System Idle

No operations are currently being performed.

• System Online

iNetVu™ system has found and locked onto the satellite, and is now ready for surfing the Internet.

ACP Testing

ACP Testing is being performed.

Skew Adjusting

Polarization adjustment for receiving the optimal Signal Strength. Polarization will rotate in both directions to locate the 3dB drop in Signal Strength, and then re-center itself using the best possible Polarization Angle.

Manual Operation

Manually controlled movement via Advanced Controls menu has been detected.

Mount Testing

System test or demo being performed via System Test and Demo menu.

Peaking on Satellite

System makes minor adjustments in positioning in order to receive optimal Signal Strength.

AZ Calibration

Azimuth Calibration is being performed.

PL Calibration

Polarization Calibration is being performed.

EL Calibration

Elevation Calibration is being performed.

CP Calibration

Compass Calibration is being performed.

Going to Position

An automatic movement command has been initiated (i.e. Find Satellite or Deploy Antenna) and the antenna is moving into the designated position.

Searching Satellite

Antenna is performing a search pattern to locate the satellite.

Stowing Antenna

Antenna is being stowed.

Antenna Stowed

Antenna is currently stowed.

Unknown Status

Satellite Modem / DVB Tuner Communication Status

Indicates the Transmitter status and displays any issues in communication with the Satellite Modem / DVB Tuner

Checking Modem

Verifying Satellite Modem's current status

Transmitter Enabled

Indicates that the transmitter has been enabled.

Transmitter Disabled

Indicates that the transmitter has not been enabled.

Transmitter Standby

Transmitter becomes idle during the ACP Test.

Modem Failed

A communication failure with the Satellite Modem has been detected.

Tuner Normal

Communication with the DVB Tuner has been detected and is active.

Tuner Failed

A communication failure with the DVB Tuner has been detected.

GPS Status

Displays condition of the GPS signal

GPS Normal

GPS signal is being received from the GPS Antenna.

GPS Failed

GPS signal is not being received from the GPS Antenna.

GPS Searching

iNetVu™ Mobile Software attempts to detect a GPS signal from the GPS Antenna for 2 minutes.

GPS Override

GPS coordinates have been manually overridden from the Maintenance menu.

Controller Status

Displays communication status between the PC and the iNetVu™ Controller

Controller Normal

Indicates normal communication status between the Controller and the PC

Controller Failed

A failure in communication between the Controller and the PC has been detected.

Motor Status

Displays the movement of the 3-axis motors: Elevation, Azimuth, and Polarization

EL Moving UP / DN

Elevation Motor is moving in the respective direction (UP = Up, DN = Down)

• AZ Moving Left / Right

Azimuth Motor is moving in the respective direction

PL Moving CCW / CW

Polarization Motor is moving in the respective direction (CCW = Counter Clock-Wise, CW = Clock-Wise)

Motor Unknown

Motor Status cannot be detected.

Antenna Status / DVB Signal Status

Displays any relevant information regarding the Limit Switches and Potentiometers and/or Inclinometer.

Antenna Normal

Limit Switches are ON/OFF in the correct relation to the Elevation, Azimuth and Polarization Angles.

Antenna Failed

Limit Switches are NOT ON/OFF in the correct relation to the Elevation, Azimuth and Polarization Angles.

Antenna Unknown

Mobile Platform cannot be found. Ensure that the iNetVu™ Controller is functioning and that all cables are connected should this indicator appear.

If the DVB Tuner is installed, this field will display the DVB Signal Status.

• DVB-S LOCKED

Tuner has received a positive lock status on the target signal

DVB-S UNLOCKED

Tuner is not locked onto the target signal

11.6.3. Configuration

The Configuration menu allows users to configure the communication medium between the Satellite Modem and iNetVu™ Mobile Software, iNetVu™ Controller and iNetVu™ Mobile Software, as well as various System parameters for optimal performance.

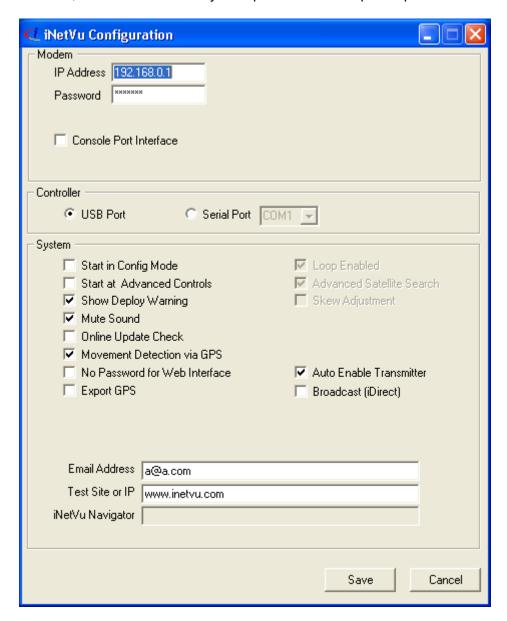


Fig. 32: Configuration Menu

Modem

Communication settings between iNetVu™ Mobile Software and the Satellite Modem.



Fig. 33: Configuration - Modem

IP Address

IP Network Address of the Satellite Modem.

Password

Enter the Network Administrator's password

Console Port Interface

A secondary communication method between IMS and the Satellite Modem.

If this option is enabled, ensure you connect your Console Cable, select a free serial port and set the baud rate at default 9600bps. If you cannot establish communication, the baud rate may require to be set to 4800bps.

Controller

Method of communication between iNetVu™ Controller and PC.



Fig. 34: Configuration – Controller Parameters

USB drivers are installed with the application and can be manually loaded at the following path: C:\Program Files\C-COM Satellite Systems Inc\iNetVu Mobile 5000

System

All of the options are set by default and it is recommended that they not be changed. Non-customizable options are grayed out for the system's protection.

-System -							
	Start in Conf	g Mode	V	Loop Enabled			
	Start at Adv	Advanced Satellite Se	arch				
✓	Show Deploy Warning Skew Adjustment						
✓	Mute Sound						
	Online Upda	te Check					
✓	Movement D	etection via GPS					
	No Passwore	for Web Interface	~	Auto Enable Transmitter			
	Export GPS			☐ Broadcast (iDirect)			
E	mail Address	a@a.com					
Te	Test Site or IP www.inetvu.com						
iNetVu Navigator							
	_	,					

Fig. 35: Configuration – System Parameters

Start in Config Mode

Enables the application to start in **CONFIG** Mode. Recommended for advanced users and installers for trouble-shooting purposes. When trouble-shooting issue is resolved, it is recommended that this option be disabled, and that the iNetVu[™] Mobile Software be changed back the **USER** mode.

Start at Advanced Controls

Enables the iNetVu™ Mobile Software to startup in the Advanced Controls menu.

Show Deploy Warning

Enables an automatic message prompt that notifies the user whenever the antenna is about to move.

Mute Sound

Mutes all iNetVu™ Mobile Software sound effects.

Online Update Check

Enables an automatic check to the iNetVu™ Server when system is online for any released updates for the iNetVu™ Mobile Software, iNetVu™ Controller Firmware, and iNetVu™ Navigator.

Movement Based On GPS

Enables antenna to automatically stow in the event that the Mobile Platform moves while the antenna is deployed and is not in the stowed position.

No Password For Web Interface

Allow the user to access the web interface without entering a password for login.

Export GPS

Using the NEMA standard, exports the GPS location over a serial interface to the modem.

Auto Enable Transmitter

This option automatically enables the transmitter once the iNetVuTM System finishes peaking on satellite.

Broadcast (iDirect)

For iDirect service only, this option allows the user to enable the transmitter on any satellite without a receive signal from the modem. The DVB tuner could be used to locate the specified satellite.

Email Address

Contact email address. This will only be used for support and trouble-shooting purposes.

Test Site or IP

Connectivity is tested by 'pinging' the entered URL or IP Address

11.6.4. Maintenance

The Maintenance menu allows users to set the Satellite's name and orbital slot, conduct maintenance tests/processes, override parameters, and run a system diagnosis check.

Click **Send/Save** if any modifications are made.

Modifications are typically saved into the PC's system registry followed by the iNetVu[™] Controller's EPROM. You will be prompted to save into the Controller's EPROM after making a modification, and it is recommended to do so because you may lose any modifications made after powering off your iNetVu[™] Controller.

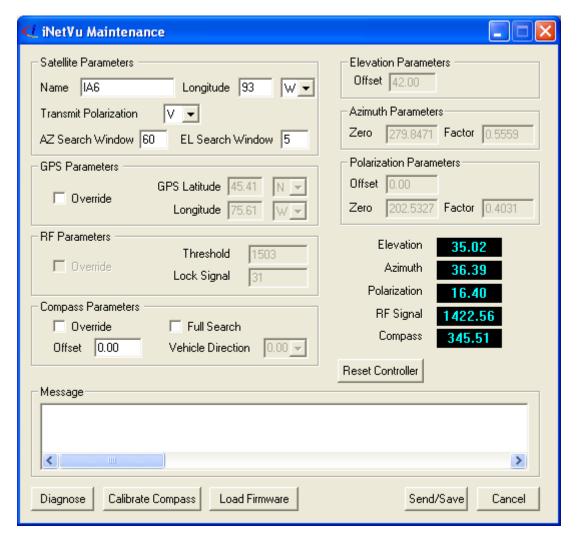


Fig. 36: Maintenance Menu

Satellite Parameters

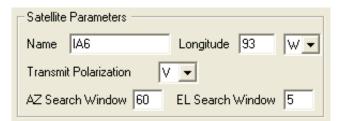


Fig. 37: Maintenance Menu – Satellite Parameters

Name

Name of the desired Satellite.

Longitude

Orbital slot / Longitude of the desired Satellite. The **Find Satellite** command will use this value when attempting to find and lock onto a satellite signal.

Transmit Polarization

Polarization of Tx signal.

AZ Search Window / EL Search Window

The Search Window is the area of the sky which the iNetVu™ Mobile System will search for the desired Satellite. It uses a rectangular window and searches for the Satellite using smaller concentric windows until the desired Satellite is found. The Search Window range may be manually changed from the default settings which iNetVu™ uses to find the satellite should the desired Satellite cannot be found.

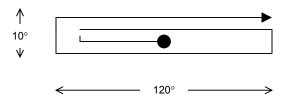


Fig. 38: Satellite Search Window

The default Azimuth (Horizontal) range is 60° on each side of the Target Point and the default Elevation (Vertical) range is 5° on each side of the Target Point.

Increasing the size of the Search Window will increase the ability to find the desired Satellite, although increasing the Search Window will lengthen the search time.

GPS Parameters



Fig. 39: Maintenance Menu – GPS Parameters

Override

Enables the GPS coordinates to be manually overridden. This should only to be enabled in the event that the GPS Antenna is malfunctioning and the user has a reliable, alternate source for coordinates.

Note: If you have overridden the GPS coordinates, they will have to be updated if the Mobile Platform has moved to a new location since the overridden values will no longer be accurate.

RF Parameters

Enables the RF Threshold to be manually overridden.



Fig. 40: Maintenance Menu - RF Parameters

Override / Threshold

Used by the iNetVu™ Mobile Software to begin a signal optimization process for peaking on a Satellite signal after initially locating it. Enabling this option and setting the RF value too low will result in an inability to acquire a reliable signal.

Compass Parameters

The Compass is pre-calibrated by a professional installer at the time of system installation.

A number of factors can contribute to the iNetVu™ compass to produce an incorrect reading such as being parked in close proximity to a large metallic object. Should the compass heading be inaccurate by more than 20 degrees, you may need to re-calibrate it.



Fig. 41: Maintenance Menu - Compass Parameters

Override

Enables the Compass to be manually overridden. Ensure that you are using a reliable alternate source.

After enabling Override, you may enter the vehicle's direction as indicated on your alternate compass. Keep in mind that the base of the iNetVu™ Mobile Platform is oriented to the rear of your vehicle. When taking the direction on the alternate compass, take the direction of your reading while facing the front of the vehicle, and use this orientation for the **Vehicle Direction** field.



This end is the reference for Vehicle Orientation

Fig. 42: Compass Orientation and Approximate Values

Offset

The number of degrees the Mobile Platform is rotated in reference to True North.

Full Search

Performs a full 360° Azimuth search for the desired Satellite. This process may take up to 30 minutes to find and lock onto Satellite.

Elevation Parameters

Refer to the CONFIG Mode section for a detailed description.



Fig. 43: Maintenance Menu – Elevation Parameters

Azimuth Parameters / Polarization Parameters

Refer to the CONFIG Mode section for a detailed description.

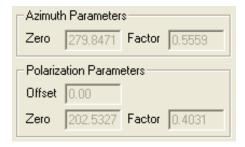


Fig. 44: Maintenance Menu – Azimuth and Polarization Parameters



Calibrate Compass

A two-stage automatic process which:

- Tests the Compass' accuracy
- Calibrates the Compass, should the compass be found to be inaccurate



Load Firmware

Loads the <code>iNetVu_Box.s19</code> firmware file into iNetVuTM Controller from the iNetVu program folder.

The update process is displayed on screen and will notify the user when the process is complete. The controller will be unavailable during this time. It is strongly recommended that the firmware be updated after every iNetVu™ Mobile Software upgrade.

This feature will prompt you to manually power-cycle the iNetVu[™] Controller for firmware versions lower than 2.2.



Diagnose

A system diagnostic tool used for locating system irregularities and for trouble-shooting purposes.

Should any irregularities or components of concern require attention, a message prompt will appear describing the issue.



Fig. 45: Maintenance Menu – Diagnosis Report

11.6.5. **About**

Displays information to the user about various sub-system components, as well as contact information for support and feedback.

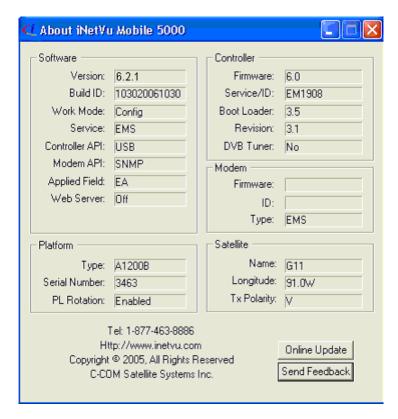


Fig. 46: About Menu

Software

- Version iNetVu™ Mobile Software version
- Build ID Date of software release
- Work Mode **Current Operation Mode**

Controller API

Software

- Service
- Service which iNetVu™ Mobile Software is configured for



Method of communication between the iNetVu™ Controller and iNetVu™ Mobile

Modem API

Method of communication between Satellite Modem and iNetVu™ Mobile Software

Applied Field

Abbreviation for Service

Web Server

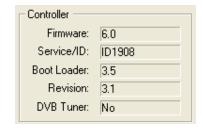
Indicates whether the HTTP Interface is active for the iNetVu™ 5000 Controller.

Controller

Firmware

iNetVu™ Controller's firmware version.

For compatibility purposes, Controllers are preconfigured with the appropriate firmware for the accompanied software version.



Service/ID

iNetVu™ Controller Serial Number ID.

This field is supported for iNetVu™ Controller Firmware 4.2 and higher.

Boot Loader

- 1.0 USB not supported. Serial connection is required when uploading Firmware.
- o 2.1 Supports USB
- 2.2 Controller Reset not required when updating firmware
- o 3.5 5000 Series Controllers Latest Version
- o 9.0 9000 Series Controllers LCD Version 2.0
- o 9.1 9000 Series Controllers LCD Version 3.0

Revision

- 2.0.1 Stow button not available on rear of controller. Customers with this controller should contact C-Com systems for an immediate upgrade.
- o 2.1 **Stow** button is available on rear of controller.
- o 3.1 Latest version at time of publication

DVB Tuner

Displays if a DVB Tuner is detected

Type: A1200B

Serial Number: 3463
PL Rotation: Enabled

Platform

Platform

Type

Mobile Platform type and size

A1800A, A1200B, A0950B, A0980B, A0740B, A0660A, ME1200, ME950, ME740, MF1200, MF950, MF740, Unknown

- o 1800 1.8m
- o 1200 1.2 m
- o 980 0.98 m
- o 950 0.95 m
- o 740 0.74 m
- o 660 0.66 m

• Serial Number

Mobile Platform serial number

PL Rotation

Enabled / Disabled - Only disabled for circular signaled frequency bands

Modem

Firmware

Satellite Modem's firmware version.

ID

Satellite Modem's Hardware ID or Serial Number

Type

Modem type

Satellite

Name

Name of Satellite

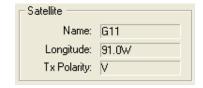
Longitude

Orbital slot of Satellite

Tx Polarity

Transmit Signal Polarization





11.7. iNetVu™ Menus (CONFIG Mode)

The following section will define and describe all of the parameters and functions only available in **CONFIG** mode. This section will only explain the new functionalities.

Refer to the iNetVu™ Menus (USER Mode) section for a detailed description of those parameters and functions which are also found in **USER** mode.

11.7.1. Configuration

Working in **CONFIG** mode, parameters that were previously disabled, are now enabled and modifiable in the Configuration menu.

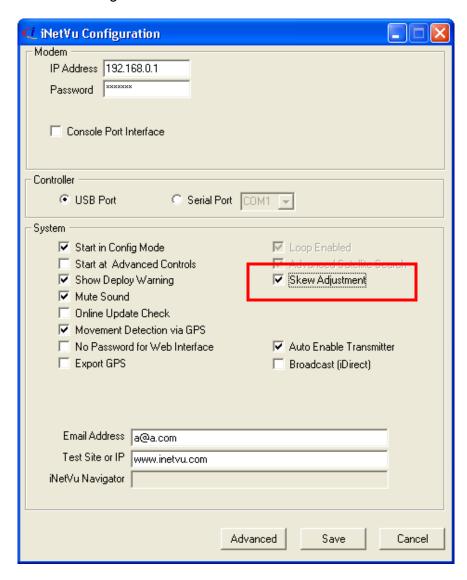


Fig. 47: Configuration Menu - CONFIG Mode - New Items

11.7.2. Advanced Configuration Menu

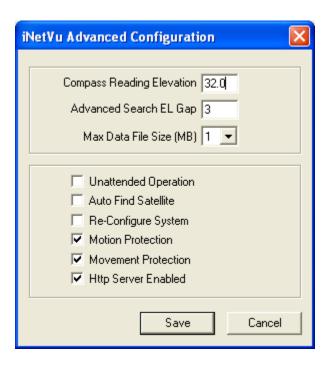


Fig. 48: Advanced Configuration Menu

Compass Reading Elevation

Number of degrees that the Antenna requires to be elevated to ensure that the compass is level and is able to acquire an accurate compass reading.

	PLATFOR	RM TYPES						
	MF1200	ME1200	A1200C	A1200B	A0980B	MF950	ME950	A0950B
COMPASS READING ELEVATION	35	32	32	32	35	37	35	35

	PLATFORM TYPES							
	MF740	ME740	A0740B	A1800A	A0660A			
COMPASS READING ELEVATION	40	40	40	32	24.5			

Fig. 49: Compass Reading Elevation Default Values

Advanced Search EL Gap

Parameter used to determine the small incremental adjustments required for a more accurate satellite search. Decreasing this value will add accuracy to the Search Window, but will increase the search time.

Data File Max Size

Maximum size of the Data Log file

Data Log File Filename: iNetVuData5000.txt

Data Log File Backup Filename: iNetVuData5000.bak

Unattended Operation

Automatically finds satellite should the Mobile Platform be forced to stow by external forces such extreme movement due to weather.

If the system takes too long to find satellite because of extreme movement due to weather, the mobile platform will be forced to stow. After a delay of one hour, the system will automatically try to acquire satellite. It will keep trying for a 24 hour period.

An option recommended for unattended remote sites which have **Movement Protection** and **Motion Protection** enabled.

Auto Find Satellite

Enables an automatic **Find Satellite** command when iNetVu™ Mobile Software is started.

Re-Configure System

Enables user to the ability re-configure system settings after restarting iNetVu™ Mobile Software.

Motion Protection

The iNetVu™ Mobile Platform will automatically disable the transmitter if unexpected motion is detected due to poor weather conditions. If the extreme motion stops within a 2 minute time period, the antenna will automatically re-peak on satellite. Otherwise, the antenna will stow.

Movement Protection

The iNetVu™ Mobile Platform will automatically stow the antenna should it detect that it is moving faster than 5km/h.

HTTP Server Enabled

The iNetVu™ Mobile Software will automatically generate an HTTP Server in order for the user to access the Web-Based Interface.

11.8. Maintenance

Modifying Parameters

After modifying a parameter in the Maintenance Menu, you can click **Send <Parameter Modified >** to ensure that any individual modification is saved and recorded.

Example:

Azimuth Parameters modified: Click **Send AZ**Elevation Parameters modified: Click **Send EL**

Modifications are typically saved into the PC's system registry followed by the iNetVu™ Controller's EPROM. You will be prompted to save into the Controller's EPROM after making a modification, and it is recommended to do so because you may lose any modifications made after powering off your iNetVu™ Controller.

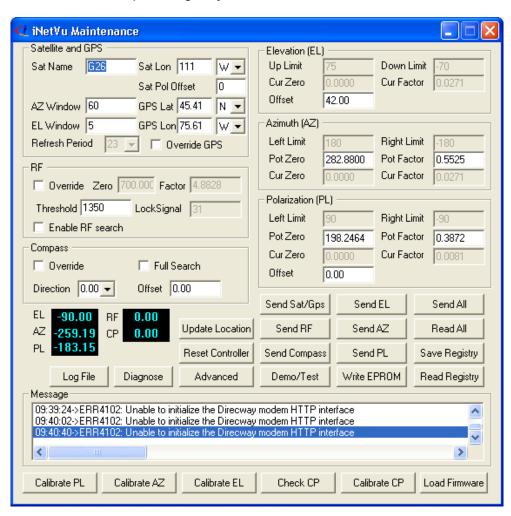


Fig. 50: Maintenance Menu - CONFIG Mode

Satellite and GPS Parameters

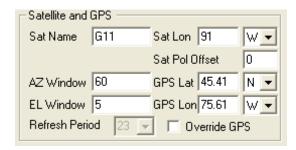


Fig. 51: Advanced Maintenance – Satellite and GPS Parameters

Sat Pol Offset

Denotes Transmit Polarity and may be altered to accommodate any offset ranged 0° - 90°

- 0 Vertical
- 90 Horizontal

RF Parameters



Fig. 52: Advanced Maintenance – RF Parameters

Enable RF search

This checkbox allows the user to switch the system search mode from DVB search to RF search, and vice-versa. The switch takes effect after writing the RF parameters to EPROM and resetting the controller.

Elevation Parameters

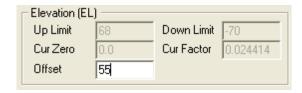


Fig. 53: Advanced Maintenance – Elevation Parameters

Offset

The number of degrees at which the iNetVu™ Mobile Software will offset the reading from the Inclinometer in order to produce an accurate (+/- 2°) Elevation Angle.

The Inclinometer is installed with an offset in order to produce an accurate Elevation Angle reading. Each type of Mobile Platform has its own default offset value.

This value is normally changed when performing the Target Calibration process to compensate for un-level surroundings, and should be left at this updated value.

	PLATFOR	PLATFORM TYPES							
	MF1200	ME1200	A1200C	A1200B	A0980B	MF950	ME950	A0950B	
EL OFFSET	42.00	42.00	42.00	42.00	31.00	25.00	31.00	31.00	

	PLATFORM TYPES							
	MF740 ME740 A0740B A1800A A0660A							
EL OFFSET	25.40	31.00	31.00	46.5	55.00			

Fig. 54: Default Elevation Offsets. All values are + 2° after Target Calibration.

Azimuth Parameters



Fig. 55: Advanced Maintenance – Azimuth Parameters

The Azimuth Angle is based on 2 values:

- AZ Pot Factor
- AZ Pot Zero

AZ Pot Factor is an A/D value from the potentiometer which allows the iNetVu™ Mobile Software to convert the A/D value of the Potentiometer into an equivalent angle. The AZ Pot Factor should vary approximately ±15% from the Default values below.

AZ Pot Zero is an A/D value from the potentiometer which physically determines where the iNetVu™ Mobile Software places Azimuth Angle 0°. The AZ Pot Zero may vary approximately ±15% from the Default values below.

The AZ Pot Factor and AZ Pot Zero are calculated during the Azimuth Calibration process.

	PLATFORM TYPES						
	MF1200	ME1200	A1200B A1200C	A0980B	MF950	ME950	A0950B
AZ POT ZERO	376.14	286.1878	286.1878	343.0747	226.0722	343.0747	343.0747
AZ POT FACTOR	0.737	0.5525	0.5525	0.6683	0.4515	0.6683	0.6683

	PLATFORM TYPES						
	MF740 ME740 A0740B A1800A A0660A						
AZ POT ZERO	226.0722	343.0747	343.0747	280.7808	343.0747		
AZ POT FACTOR	0.4515						

Fig. 56: Azimuth Potentiometer Default Values

Polarization Parameters

Polarization (PL)							
Left Limit	70	Right Limit	-70				
Pot Zero	131.7888	Pot Factor	0.2574				
Cur Zero	0.0	Cur Factor	0.012207				
Offset	0.0	Disable Rotation					

The Polarization Angle is based on 2 values:

- PL Pot Factor
- PL Pot Zero

PL Pot Factor is an A/D value from the potentiometer which allows the iNetVu™ Mobile Software to convert the A/D value of the Potentiometer into an equivalent angle. The PL Pot Factor should vary approximately ±15% from the Default values below.

PL Pot Zero is an A/D value from the potentiometer which physically determines where the iNetVu™ Mobile Software places Polarization Angle 0°. The PL Pot Zero may vary approximately ±15% from the Default values below.

The PL Pot Factor and PL Pot Zero are calculated during the Polarization Calibration process.

	PLATFORM TYPES							
	MF1200	ME1200	A1200B/ A1200C	A0980B	MF950	ME950	A0950B	
PL POT ZERO	250.2905	203.066	203.066	128.5094	80.2096	128.5094	128.5094	
PL POT FACTOR	0.5304	0.3852	0.3852	0.2574	0.1586	0.2574	0.2574	

	PLATFORM TYPES							
	MF740	ME740	A0740B	A1800A	A0660A			
PL POT ZERO	80.2096	128.5094	128.5094	205.4144	128.5094			
PL POT FACTOR	0.1586	0.2574	0.2574	0.4012	0.2574			

Fig. 57: Polarization Potentiometer Default Values

Disable Rotation

An option that is used for circular-signaled frequency bands such as X-Band or Ka-Band.

It will only be available for the A0660A and A1800A Mobile Platforms. By default, the Polarization will be disabled for the A0660A Mobile Platform, and enabled for the A1800A Mobile Platform. This function can only be accessed via CONFIG Mode, and the Polarization ST Limit Switch must be closed and permanently display ST.

When checked, the Polarization Angle will display 0.00.

Demo/Test

Demo / Test

Opens System Test and Demo menu screen

Send RF

Send < Parameter Name >

Sends associated parameters to the iNetVu[™] Controller's EPROM memory. The system will prompt the user and ask whether to save these parameters to the EPROM. The values saved only in memory and not EPROM will be lost when the controller is reset.

Write EPROM

Write EPROM

Sends and writes <u>ALL</u> the parameter's to the iNetVu™ Controller's EPROM.

Send All

Send All

Sends <u>ALL</u> parameters to the controller's memory. The system will prompt the user and ask whether to save these parameters to the EPROM.

Read All

Read All

Reads <u>ALL</u> parameters from the iNetVu[™] Controller's EPROM memory and sets the values into the iNetVu[™] Mobile Software

Save Registry

Save Registry

Sends <u>ALL</u> parameters to the local registry

Read Registry

Read Registry

Reads <u>ALL</u> parameters from the local registry and sets the values into the iNetVu[™] Mobile Software

Advanced

Advanced

Opens Advanced Maintenance menu

Calibrate PL

Calibrate PL

Performs automated Polarization Calibration process.

- i. Antenna will completely rotate counter-clockwise to the physical limit and temporarily record the A/D value from the Potentiometer.
- ii. Antenna will completely rotate clockwise to the physical limit and temporarily record the A/D value from the Potentiometer.
- iii. Based on the A/D values of the two (2) physical limits, and the maximum range of motion for the Mobile Platform, the PL Pot Factor is calculated.
- iv. Antenna will center itself and attempt to locate the cut-off edges of the Polarization Stow Switch.
- v. After detecting at which angles the ST Switch turns OFF, the Polarization zero position is calculated and the PL Pot Zero is set

at the zeroed A/D value.

vi. You will then be prompted to enter the Platform ID Number prior to finishing the Calibration Process.



Calibrate AZ

Performs automated Polarization Calibration process.

- i. Antenna will completely rotate counter-clockwise to the physical limit and temporarily record the A/D value from the Potentiometer.
- ii. Antenna will completely rotate clockwise to the physical limit and temporarily record the A/D value from the Potentiometer.
- iii. Based on the A/D values of the two (2) physical limits, and the range of motion for the Mobile Platform, the AZ Pot Factor is calculated.
- iv. Antenna will center itself and attempt to locate the cut-off edges of the Azimuth Stow Switch.
- v. After detecting at which angles the ST Switch turns OFF, the Azimuth zero position is calculated and the AZ Pot Zero is set at the zeroed A/D value.
- vi. You will then be prompted to enter the Platform ID Number prior to finishing the Calibration Process.



Calibrate EL

The iNetVu™ Mobile Software will move the Mobile Platform through its entire range on the Elevation Axis in order to calibrate the Elevation Current Limits. This function is typically never used, and is not recommended for use unless under the supervision or direction of a C-COM Technical Support Team Member.



Check CP

Tests the compass' heading and accuracy by rotating the antenna at 90° intervals and comparing the compass readings with the actual antenna's movement.

- i. Antenna will center itself; move to the proper Elevation for reading the compass, then read the compass heading.
- ii. Antenna will rotate 90° to each of the following positions and read the compass at each: 0°, 90°, 180°, -90°, 0°
- iii. iNetVu™ Mobile Software will compare the compass heading values read at each position, and determine if they differ by approximately 90°.
- iv. The Compass Check will display a message regarding the accuracy of the compass.



Calibrate CP

Automatically calibrates compass

i. Ensure that there are no metallic objects that could interfere with the Compass, and that the Mobile Platform is on level surroundings.

ii. Orient the Mobile Platform as depicted in the following figure. It is recommended that you use an external compass to be as accurate with the orientation as possible.

This end faces South



This end faces North

Fig. 58: Compass Orientation and Approximate Values

- iii. The Antenna will now rotate in 90° intervals and attempt to calibrate the compass.
- iv. A message prompt will appear to notify you that the Compass Calibration has been completed successfully or not.

Log File

Log File

Automatically opens the iNetVu Data Log File in Notepad.

11.9. System Demo and Test

Used for system tests, trouble-shooting, and for demonstrating the iNetVu™ Mobile System.

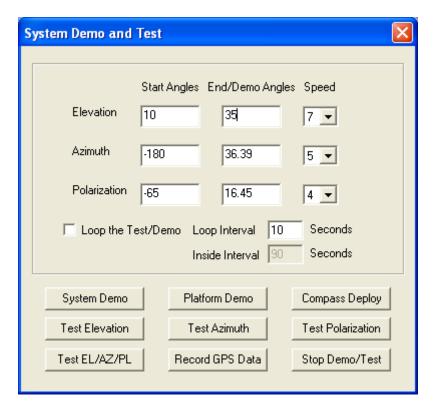


Fig. 59: Demo and Test Menu

Start Angles

Initial values for the test/demo sequence

End/Demo Angles

End values for the test/demo sequence

Speed

Speed of the motor during the test/demo sequence (1 – lowest, 9 – highest)

Loop the Test/Demo

Enables an infinite loop of the test/demo sequence

Loop Interval

Time between test/demo sequences

Inside Interval

Time required the built-in video clip to play during the System Demo sequence

System Demo

System Demo

The System Demo sequence allows users to showcase the iNetVu™ Mobile System by finding a "mock" satellite as set by the user.

The System Demo sequence will raise the dish, find and peak on the "mock" satellite signal, and simulate the acquisition of signal, using an automatic presentation application called RoboDemo. The position of the mock satellite should be entered in the End/Demo Angles field.

Platform Demo

Platform Demo

Based on the values in the End/Demo Angles field, the Mobile Platform will either move to the values set, or if it is already positioned at the End/Demo Angles, the Mobile Platform will stow.

It is recommended to use this function in conjunction with the Loop the Test/Demo option to demonstrate the repositioning and stowing capabilities of the iNetVu™ Mobile Platform.



Compass Deploy

Positions Antenna to a level Elevation angle and updates compass heading.



Record GPS Data

Continuously stores GPS data in a log file named iNetVuGPS.txt



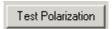
Test Elevation

Moves dish to the values set in the Start Angle and End/Demo Angle fields



Test Azimuth

Moves dish to the values set in the Start Angle and End/Demo Angle fields



Test Polarization

Rotates dish to the values set in the Start Angle and End/Demo Angle fields



Test EL/AZ/PL

Moves and rotates to the values set in the Start Angle and End/Demo Angle fields



Stop Demo/Test

Halts all test/demo sequences

11.10. Advanced Maintenance Menu

Used for modifying the speeds and current limits of the system's mount motors.



Only under the instruction of C-Com Systems should the values in the Advanced Maintenance menu be changed. Any modifications without the assistance of a C-Com Technical Support technician may cause problems.

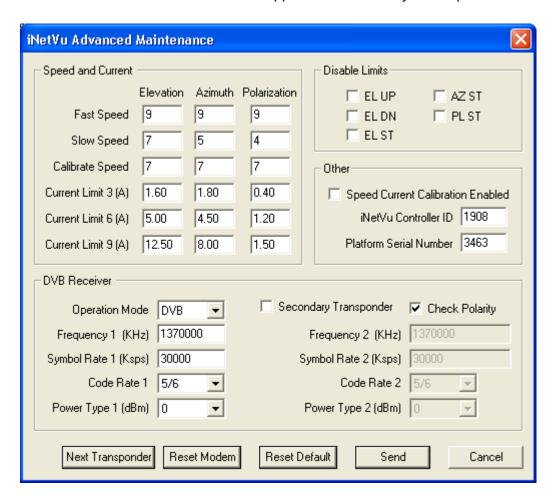


Fig. 60: Advanced Maintenance Menu

Fast Speed / Slow Speed / Calibrate Speed Default speed values for the automated processes such as Finding Satellite, Stowing Antenna, and Calibration processes.

Current Limit

A software controlled current protection for the Mobile Platform's motors.

When any of the Mobile Platform's motors are moving at the associated speed, the current drawn to move the motor is monitored and should it exceed the Current Limit, an error message will appear. For Motor Speeds that are not listed (Speed 1, 2, 4, 5, 7, 8), the Current Limit for those speeds is calculated using a percentage of the Current Limit above it.

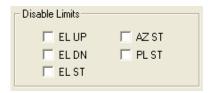
- Current Limit 8 90% of Current Limit 9
- Current Limit 7 80% of Current Limit 9
- Current Limit 5 90% of Current Limit 6
- Current Limit 4 80% of Current Limit 6
- Current Limit 2 90% of Current Limit 3
- Current Limit 1 80% of Current Limit 3

Speed and Current			
	Elevation	Azimuth	Polarization
Fast Speed	9	9	9
Slow Speed	7	5	4
Calibrate Speed	7	7	7
Current Limit 3 (A)	1.60	1.80	0.40
Current Limit 6 (A)	5.00	4.50	1.20
Current Limit 9 (A)	12.50	8.00	1.50

	PLATFOR	M TYPES					
	MF1200	ME1200	A1200C/ A1200B	A0980B	MF950	ME950	A0950B
EL FAST	9	9	9	9	9	9	9
EL SLOW	7	5	4	4	5	4	4
EL CALIBRATE	7	7	7	7	7	7	7
EL CURRENT3	1.60	1.60	1.60	1.60	1.60	1.60	1.60
EL CURRENT6	5.00	5.00	5.00	5.00	5.00	5.00	5.00
EL CURRENT9	12.50	12.50	12.50	12.50	12.50	12.50	12.50
AZ FAST	9	9	9	8	8	8	8
AZ SLOW	6	5	7	4	5	4	4
AZ CALIBRATE	7	7	7	7	7	7	7
AZ CURRENT3	1.30	1.80	1.80	1.80	1.30	1.80	1.80
AZ CURRENT6	3.50	4.50	7	4.50	3.50	4.50	4.50
AZ CURRENT9	6.00	8.00	8.00	8.00	6.00	8.00	8.00
PL FAST	9	9	9	9	9	9	9
PL SLOW	4	4	4	7	7	7	7
PL CALIBRATE	7	7	7	7	7	7	7
PL CURRENT3	0.40	0.40	0.40	0.40	0.40	0.40	0.40
PL CURRENT6	1.20	1.20	1.20	1.20	1.20	1.20	1.20
PL CURRENT9	1.50	1.50	1.50	1.50	1.50	1.50	1.50

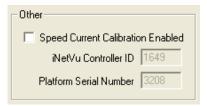
	PLATFORM TYPES				
	MF740	ME740	A0740B	A1800A	A0660A
EL FAST	9	9	9	9	9
EL SLOW	4	4	4	7	4
EL CALIBRATE	7	7	7	7	7
EL CURRENT3	1.60	1.60	1.60	1.60	1.60
EL CURRENT6	5.00	5.00	5.00	5.00	5.00
EL CURRENT9	12.50	12.50	12.50	12.50	12.50
AZ FAST	8	8	8	9	8
AZ SLOW	4	4	4	6	4
AZ CALIBRATE	7	7	7	7	7
AZ CURRENT3	1.30	1.80	1.80	1.80	1.80
AZ CURRENT6	3.50	4.50	4.50	5.50	4.50
AZ CURRENT9	6.00	8.00	8.00	9.00	8.0
PL FAST	9	9	9	9	9
PL SLOW	7	7	7	4	7
PL CALIBRATE	7	7	7	7	7
PL CURRENT3	0.40	0.40	0.40	0.40	0.40
PL CURRENT6	1.20	1.20	1.20	1.20	1.20
PL CURRENT9	1.50	1.50	1.50	1.50	1.50

Fig. 61: Default values for speed and current limits



Disable Limits

Disables UP, DN, and ST limits for testing and troubleshooting. In the event that a limit is disabled, a yellow colored "F" will appear in the **Advanced Controls** menu to alert the user that a limit has been disabled.

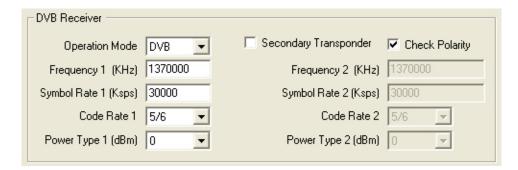


Speed Current Calibration Enabled

Enables a calibration process that optimizes the current protection values for the motors and allows for elevation to be calibrated.

Note: It is recommended to leave this option disabled.

DVB Receiver Parameters



Operation Mode

Denotes the type of signal to be received and its modulation scheme

Frequency 1 (kHz)

L-Band Receive Frequency

Symbol Rate 1 (KSps)

Symbol Rate of receive signal

Code Rate 1

FEC Rate of receive signal

Power Type 1 (dBm)

Power ratio in decibel (dB) of the measured power referenced to one milliwatt (mW).

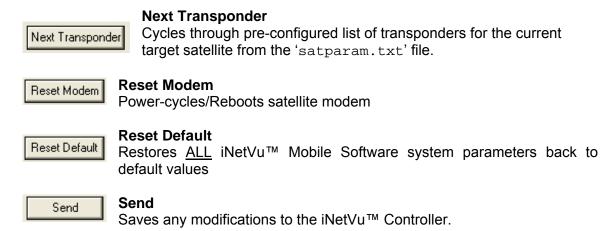
This value should always be set to 0.

Secondary Transponder

Enables a secondary transponder to be used during the satellite search process.

Check Polarity

Displays and cycles through transponders of the same user-defined polarity when 'Next Transponder' is clicked.



Appendix 1: Windows Vista Users

For user who runs the iNetVu[™] Mobile Software in Windows Vista, turning the User Account Control Off is a requirement.

How to turn User Account Control off for administrative user

- 1. Open Control Panel.
- 2. Click User Accounts in Control Panel.
- 3. Under User Accounts, click "Turn User Account Control on or off " link
- 4. Un-check 'Use User Account Control', click OK button.
- 5. Reboot computer.

How to turn User Account Control off for standard user

- 1. Open Control Panel.
- 2. Under User Account and Family Settings, click on the "Add or remove user account".
- 3. Under the user account, click on the "Go to main User Account page" link
- 4. Un-check "Use Account Control" and click OK button.
- 5. Reboot computer.